

# DoD Global Influenza Surveillance Program: *Influenza Surveillance at AFIOH*

## Overall Lab Surveillance

### Total Specimens Collected

- Collected in Week 02: 40
- Season Total: 871

### Total Influenza Positive

*Identified in Wk 02; Cumulative*

- Influenza A: 20; 71
- Influenza B: 0; 5

### Total Influenza Subtyped

*Identified in Wk 02; Cumulative*

- Influenza A/H1N1: 0 ; 2
- Influenza A/H3N2: 4 ; 25

## Sentinel Site Lab Surveillance

### Total Specimens Collected

- Collected in Week 02: 31
- Season Total: 648

### Total Influenza Positive

*Identified in Wk 02; Cumulative*

- Influenza A: 13; 44
- Influenza B: 0; 3

### Total Influenza Subtyped

*Identified in Wk 02; Cumulative*

- Influenza A/H1N1: 0; 2
- Influenza A/H3N2: 3; 15

## Research Lab Surveillance

### Total Specimens Collected

- Collected in Week 02: 0
- Season Total: 42

### Total Influenza Positive

*Identified in Wk 02; Cumulative*

- Influenza A: 0 ; 0
- Influenza B: 1 ; 2

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## Week 02

08-14 January 2006

### Current WHO Phase of Pandemic Alert: **PHASE 3**

\*Phase 3 = a new influenza virus subtype is causing disease in humans, but is not yet spreading efficiently and sustainably among humans. *The designation of phases, including decisions on when to move from one phase to another, is made by the Director-General of WHO.*

Source: [WHO](#)

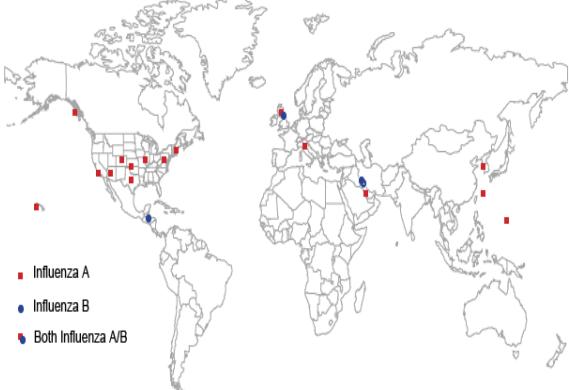
### Influenza (02 Oct - Present)

**76 influenza viruses**  
**71 Influenza A; 5 Influenza B**

9% of the completed specimens were positive for an influenza virus: 8.0% influenza A; 0.7% influenza B.

<u>Influenza A</u>	<u>Influenza B</u>
A (H1N1): 2	B (99): 0
A (H3N2): 25	B (01): 0
Un-subtyped: 44	Un-subtyped: 5

### Locations of identified influenza viruses



### Locations of identified influenza subtypes



### Vaccination Status

93% of the Active Duty Air Force, 84% of Air National Guard, and 73% of Air Force Reserve are currently vaccinated (as of 23 Jan 06). (Data gathered by MILVAX)

### Update: Human Avian Influenza (H5N1)

Turkish labs have confirmed 15th case of human infection with H5N1. ~100,000 treatment courses of Tamiflu arrived in Turkey Friday evening. The Turkish gov't has launched an intensive public awareness campaign. NOTE: 2 deaths have been reported by WHO. [Click here for more information](#). See pg 7 for a current situation of human H5N1.

### Influenza Outbreaks / News

At this time, AFIOH has not been notified of influenza outbreaks at any of the MTFs.

[CDC Recommends against the Use of Amantadine and Rimantadine for the Treatment or Prophylaxis of Influenza in the United States during the 2005–06 Influenza Season](#)

### AFIOH Report Overview

This report summarizes the status of all respiratory viral cultures processed at the AFIOH laboratory, which includes specimens collected from DoD beneficiaries at 40 tri-service sentinel sites and non-sentinel sites, as well as from foreign nationals through DoD overseas research laboratories (Armed Forces Institute of Medical Sciences [AFRIMS], the Naval Medical Research Center Detachment [NMRC-D], and the US Army Center for Health Promotion and Preventive Medicine West [CHPPM-W]).

Please visit our [website](#) to review the **"Sentinel Site Surveillance Report"** for detailed information on our sentinel site program and specimens submitted by our sentinel sites.

## Overall Laboratory Surveillance

### Week 02 overview

- Specimens “collected” in Week 02.** 40 specimens have been collected and received from 15 sites (12 sentinel and 3 non-sentinel). 30% (n=12) of these specimens have a completed result. Of these, 92% (n=11) were positive for influenza A.
- Specimens “received” in Week 02.** 95 specimens were received at AFIOH during Week 02 and are undergoing processing at this time. Specimens were collected from patients during Weeks 50-02.

MAP: Geographic coverage of DoD Influenza Surveillance\*

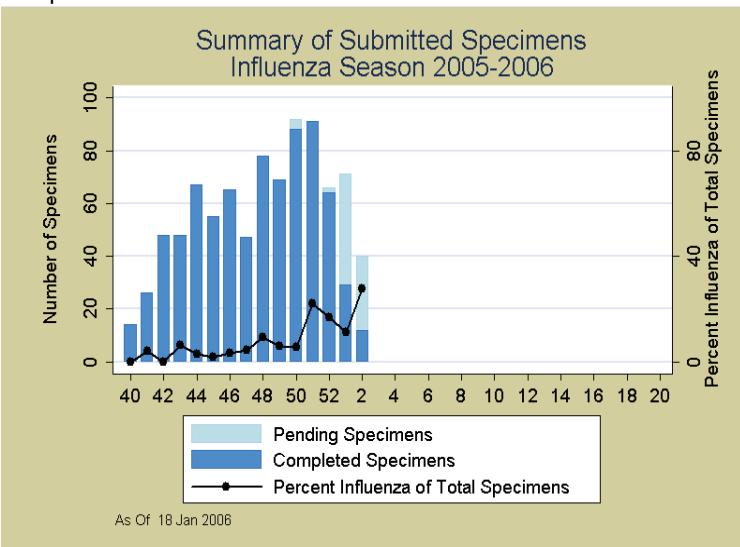


\* As determined from specimen submissions. Even though an entire location is highlighted, surveillance may be limited in scope

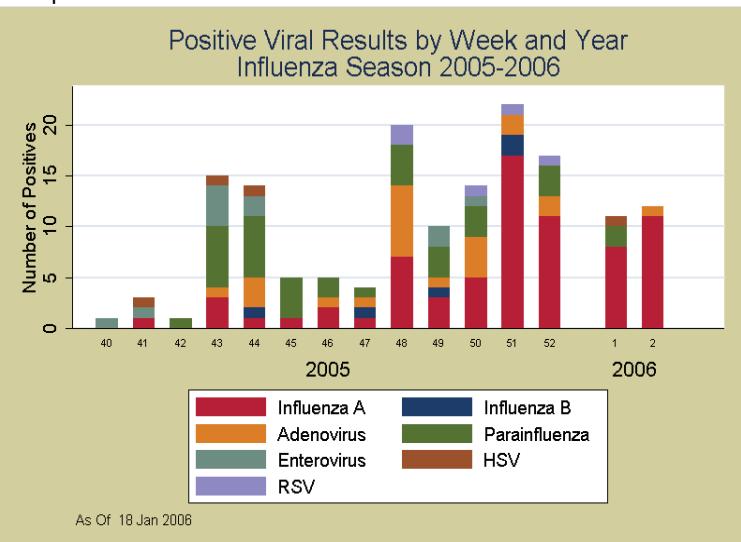
### Season overview

Since 02 October 2005, 871 specimens were received by the AFIOH laboratory and 91% (n=793) have a completed result (Graph 1). Of these, 81% (n=639) were negative and 19% (n=154) were positive for a respiratory virus. The majority (46%) of those with a positive result were influenza A, 23% (n=35) were parainfluenza, 15% (n=23) were adenovirus, 7% (n=11) were enterovirus, 3% (n=5) were influenza B, 3% (n=5) were RSV, and 3% (n=4) were HSV (Graph 2). This is unlike previous seasons, when the majority of the specimens positive for a respiratory virus were adenovirus. One possible explanation may be the more active surveillance and routine interaction taking place at the 40 sentinel sites, to include completing influenza surveillance questionnaires that restate the influenza-like illness (ILI) case definition.

Graph 1



Graph 2



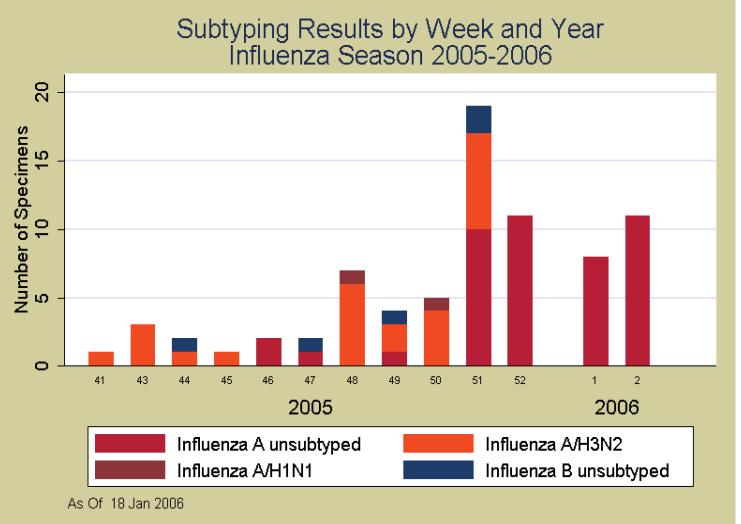
### Influenza overview

Overall, 10% (n=76) of the completed specimens were positive for an influenza virus: 9.0% influenza A; 0.6% influenza B (Graph 1).

Thirty-six percent (n=27) of the influenza isolates have been subtyped to date: 25 influenza A/H3N2 and 2 influenza A/H1N1 (Graph 3). Selected subtyped isolates are anticipated to undergo molecular characterization.

CDC has molecularly characterized X of the X isolates. 89% (25/28) were similar to that of the H3N2 strain included in this season's vaccine. Vaccination status was unknown and therefore vaccine effectiveness cannot be determined by this data. Please see [CDC's website](#) for more information.

Graph 3



**Area of Responsibility (AOR)**

Since 02 October 2005, influenza isolates identified from each AOR are as follows: NORTHCOM (64%), PACOM (21%), CENTCOM (8%), EUCOM (4%), and OTHER (3%). 100% of the isolates were submitted by sentinel sites in EUCOM, PACOM, and CENTCOM. Only 44% of NORTHCOM influenza isolates were submitted by sentinel sites. See Table 1. for an overview of this season's results through Week 02.

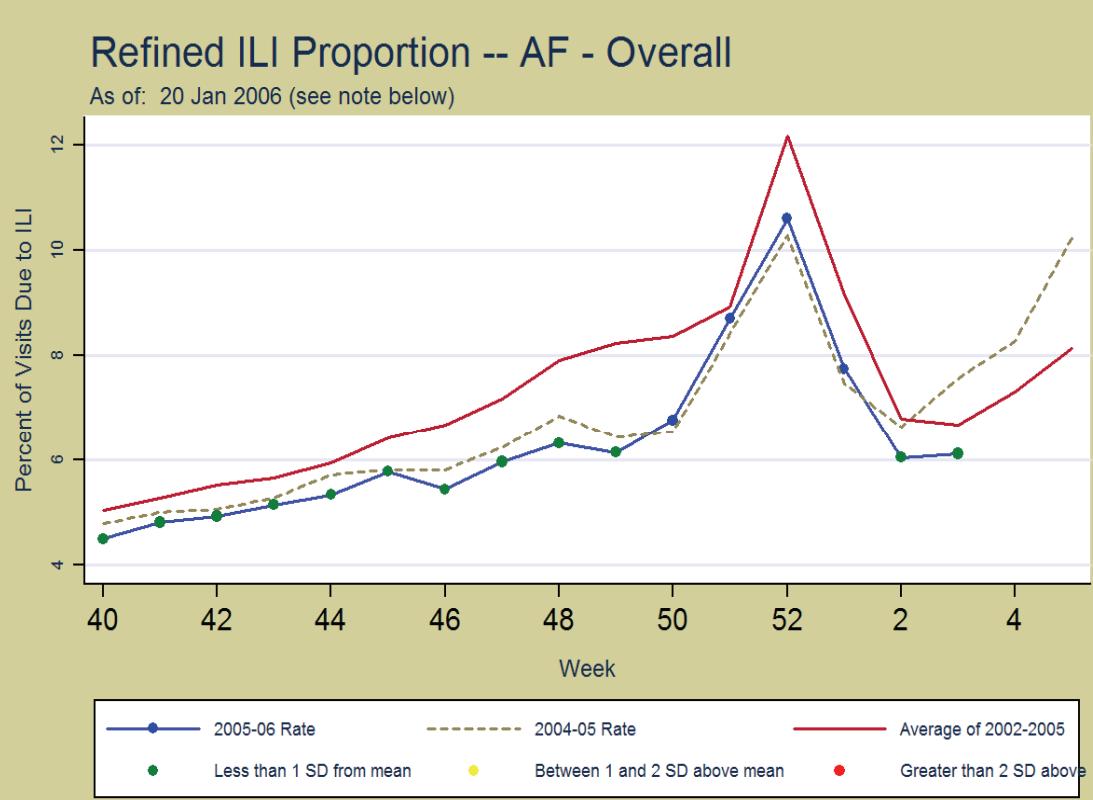
**Note:** Sentinel sites are distributed among the AOR as follows: CENTCOM (13%), EUCOM (16%), NORTHCOM (32%), and PACOM (39%). The "OTHER" AOR category includes specimens collected from foreign nationals at the overseas research lab locations and are not considered sentinel sites.

**Table 1. Laboratory Results by Area of Responsibility (AOR), Week 02 and Season Totals.**

Result	Area of Responsibility											ALL SITES
	CENTCOM		EUCOM		NORTHCOM		PACOM		OTHER			
	Week	Season	Week	Season	Week	Season	Week	Season	Week	Season	Week	Season
Influenza A		4		2	8	49	3	16				71
Influenza B		2		1							2	5
Adenovirus				3	1	15		5				23
Parainfluenza		1		9		22		2		1		35
Enterovirus		2		4		2		3				11
HSV		1		1				1		1		4
RSV						5						5
Negative		37		79		338		147		38		639
Pending		9	2	4	20	46	6	19				78
<b>TOTAL RECEIVED</b>	<b>0</b>	<b>56</b>	<b>2</b>	<b>103</b>	<b>29</b>	<b>477</b>	<b>9</b>	<b>193</b>	<b>0</b>	<b>42</b>	<b>871</b>	

**Influenza-Like Illness (ILI)**

**Overview.** As of 19-Jan-06. Influenza-like illness (ILI) activity among Air Force MTFs has decreased to 6% in Week 02, following a similar, yet slightly lower, pattern as the average. It is important to note that data in Week 03 is not complete and may vary from next week's graph.

**Graph 3. ILI Activity among Air Force Military Treatment Facilities**

\*Influenza-like illness (ILI) activity is gathered from the Standard Ambulatory Data Registry (SADR). The data are cleaned and a summary total of ICD-9's that match a smaller, but more specific and sensitive list of ICDs than is in the ESSENCE tool, are presented (Graph 3). The Surveillance Team at AFIOH are in the process of creating a DoD-wide ILI graph.

### Influenza Surveillance

**Sentinel Site Status.** Sixty-two percent (47/76) of the influenza isolates were collected from sentinel sites, 35% (n=27) were from non-sentinel sites, and 3% (n=2) were from overseas research locations (Table 2).

**FMP.** Patients with a positive influenza result were 58% (n=44) active duty members, 24% (n=18) children, 10% (n=8) spouses, and 8% (n=6) non-DoD beneficiary (Table 3).

**Vaccination.** Vaccination status was identified in 37% (n=28). Of these, 8 (29%) were vaccinated > 2wks prior to their illness (1 patient was vaccinated 2 days prior to being ill). (Table 3).

**Hospitalization/Quarters Status.** 39% (30/76) had an accompanying influenza surveillance questionnaire (*non-sentinel sites are not requested to complete the surveillance questionnaires*). Seven patients positive for influenza A were placed on quarters for 24-72 hrs. Six of the 7 specimens collected from these patients were subtyped (5 were H3N2 and 1 was H1N1).

**Table 2. Influenza Demographics by SITE and REGION**

Site by REGION	Sentinel Status	Identified in Wk 02		Season		Total Influenza
		Flu A	Flu B	Flu A	Flu B	
<b>East North Central</b>						
Scott AFB, IL	Sentinel	1	0	1	0	1
<b>West South Central</b>						
Brooks City-Base, TX	Non-Sentinel	0	0	7	0	7
Goodfellow AFB, TX	Non-Sentinel	1	0	1	0	1
Lackland AFB, TX	Non-Sentinel	4	0	10	0	10
Sheppard AFB, TX	Sentinel	1	0	1	0	1
Tinker AFB, OK	Non-Sentinel	1	0	4	0	4
<b>Mountain</b>						
USAF Academy, CO	Sentinel	3	0	16	0	16
Luke AFB, TX	Non-Sentinel	1	0	4	0	4
<b>Pacific</b>						
CGS Ketchikan, AK	Sentinel	0	0	2	0	2
Edwards AFB, CA	Non-Sentinel	0	0	1	0	1
Elmendorf AFB, AK	Sentinel	1	0	2	0	2
NMC San Diego, CA	Sentinel	0	0	1	0	1
Tripler AMC, HI	Sentinel	0	0	1	0	1
<b>Mid Atlantic</b>						
McGuire AFB, NJ	Sentinel	0	0	1	0	1
<b>South Atlantic</b>						
Andrews AFB, MD	Non-Sentinel	2	0	2	0	2
<b>Pacific Rim</b>						
121st Army, S. Korea	Sentinel	4	0	4	0	4
Andersen AFB, Guam	Sentinel	0	0	3	0	3
NH Yokosuka, Japan	Sentinel	0	0	1	0	1
Osan AB, S. Korea	Sentinel	0	0	3	0	3
<b>Europe</b>						
Aviano AB, Italy	Sentinel	0	0	1	0	1
RAF Lakenheath, U.K.	Sentinel	0	0	1	1	2
<b>Deployed</b>						
Al Al Salem AB, Kuwait	Sentinel	1	0	1	0	1
Al Udeid AB, Qatar	Sentinel	0	0	1	0	1
Camp Arifjan, Kuwait	Sentinel	0	0	2	1	3
Camp Buehring, Kuwait	Sentinel	0	0	0	1	1
<b>Central America</b>						
Honduras JTF Bravo	Research lab	0	0	0	2	2
<b>Total Influenza</b>		<b>20</b>	<b>0</b>	<b>71</b>	<b>5</b>	<b>76</b>

**Table 3. Influenza Demographics: Age, FMP, Vaccination, and Hospitalization**

Demographics	Identified in Wk 02		Season		Demographics	Identified in Wk 02		Season	
<b>Age (years)</b>	A	B	A	B	<b>Vaccination Status*</b>	A	B	A	B
0-5	1	0	8	0	Injection	1	0	6	1
6-19	2	0	14	1	Nasal Spray (FluMist)	0	0	2	0
20-64	11	0	42	2	Vax Type unknown	0	0	1	0
65 +	2	0	3	0	Not Vaccinated	0	0	19	0
Unknown	0	0	4	2	Unknown	0	0	16	2
OVERALL TOTALS	<b>16</b>	<b>0</b>	<b>71</b>	<b>5</b>	OVERALL TOTALS	<b>1</b>	<b>0</b>	<b>44</b>	<b>3</b>
<b>Family Prefix Status</b>	A	B	A	B	<b>Hospitalization Status*</b>	A	B	A	B
Military member/Sponsor	14	0	42	2	Hospitalized	0	0	0	0
Spouse	1	0	7	1	Quarters	0	0	7	0
Child	1	0	18	0	OVERALL TOTALS	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>
Other/Unknown	0	0	4	2					
OVERALL TOTALS	<b>16</b>	<b>0</b>	<b>71</b>	<b>5</b>					

\*Describes sentinel site data only. Data is dependant upon completed influenza surveillance questionnaires.

## **Additional Influenza Surveillance: Army MEDCENs**

The Army performs influenza surveillance at 6 Army Medical Center (MEDCEN) locations (Dwight David Eisenhower Army Medical Center [DDEAMC], Walter Reed Army Medical Center [WRAMC], Brooke Army Medical Center [BAMC], Madigan Army Medical Center [MAMC], Tripler Army Medical Center [TAMC], and Landstuhl Regional Medical Center [LRMC]), two of which are included in AFIOH's sentinel site surveillance network (see map to right).



The Army MEDCEN sites are major medical centers equipped with the capability of detecting respiratory viruses, including influenza. It is important to note that the methodology varies at each site (i.e., testing procedures include direct fluorescent-antibody [DFA], various rapid antigen tests, culture, and polymerase chain reaction [PCR]) and reporting is routine, but varies from site to site (i.e., weekly, bi-weekly, monthly). The information reported and shared with AFIOH describes results from the individual MEDCENs and does not include demographic information at this time.

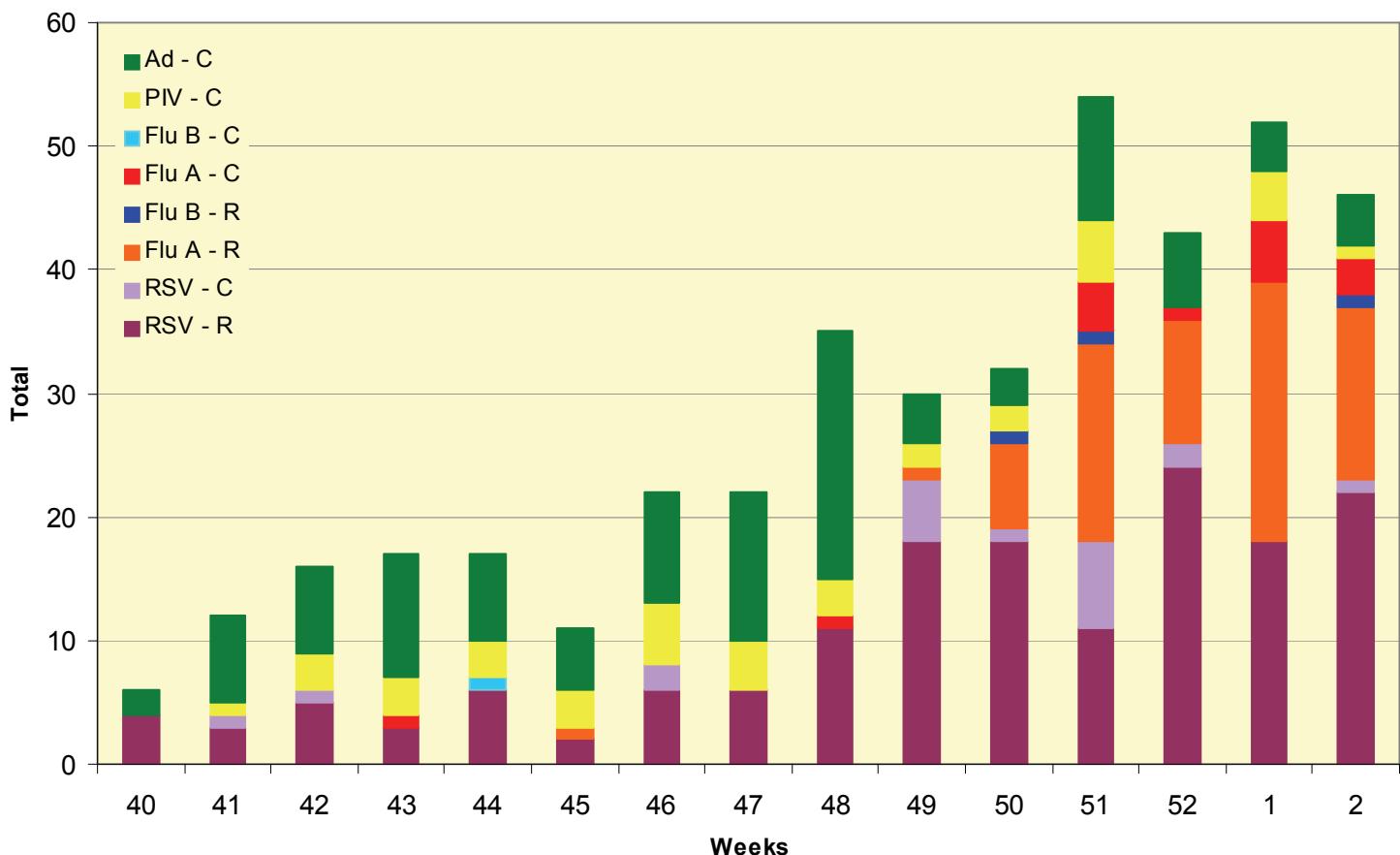
**Week 02 overview.** 209 specimens were collected and tested during Week 02. Twenty-two percent (n=46) were positive for a respiratory virus (17 influenza A; 1 influenza B; 23 RSV; 4 adenovirus; and 1 parainfluenza).

**Season overview:** Since 02 October 2005, 1,933 specimens were collected and tested. Eighty-one percent ( $n=1,518$ ) were negative and 19% ( $n=415$ ) were positive for a respiratory virus (85 influenza A; 4 influenza B; 177 RSV; 39 parainfluenza; and 110 adenovirus). Of the specimens collected and tested, 5% were positive for an influenza virus (Graph 4.).

*Subtyping:* No data to report.

POC for Army MEDCEN surveillance is MAJ Wade Aldous.

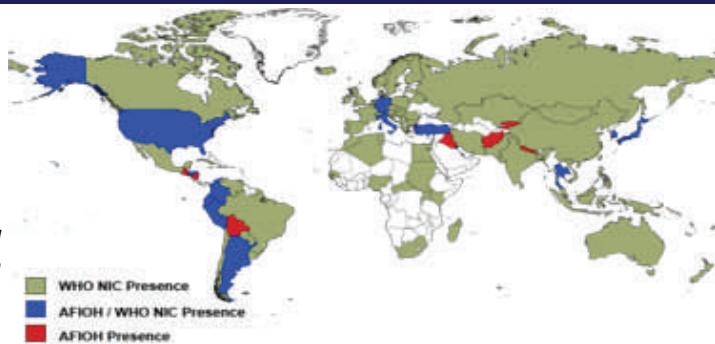
#### **Graph 4. 2005-2006 ARMY MEDCEN Viral Respiratory Summary**



### Contributions to National and Global Influenza Surveillance

It is important to note that although a country is highlighted, surveillance may be limited in scope. AFIOH provides surveillance data from 21 countries - 8 countries (Bolivia, El Salvador, Guatemala, Iraq, Kyrgyzstan, Nepal, Nicaragua, and Qatar) are not otherwise included in the current WHO network.

Note: Map describes countries submitting specimens to AFIOH and does not include all DoD contributing countries (i.e., NAMRU-2 and NAMRU-3 surveillance described on page 8).



### Data Sharing

AFIOH electronically reports data to CDC using the Public Health

Laboratory Information System (PHLIS). The data shared is incorporated into WHO's and CDC's influenza surveillance summaries. Additionally, data from Texas military sites are reported to the Texas Department of State Health Services (TDSHS).

### CDC / WHO Influenza Surveillance

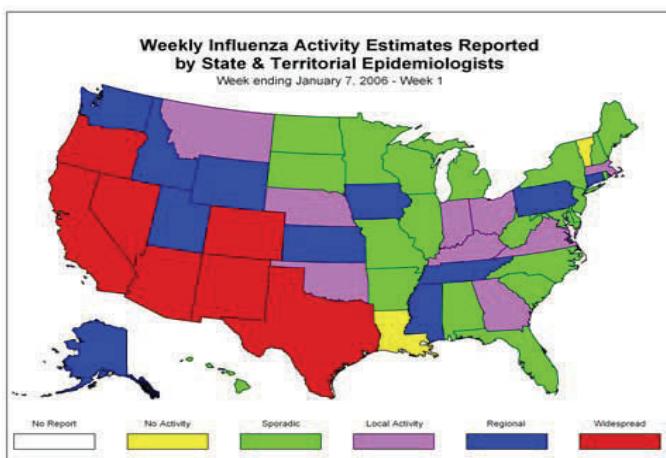
CDC reported influenza activity continuing at the same level as recent weeks during Week 01. Of the specimens tested, 9.1% were positive for an influenza virus (see CDC map below). Since 02 October 2005, a total of 4% of specimens have tested positive for influenza.

**NOTE:** WHO website was inaccessible at the time this report was generated. Data displayed in WHO table and WHO map below reflects Week 51's data. Please see the WHO influenza activity table and CDC and WHO maps below.

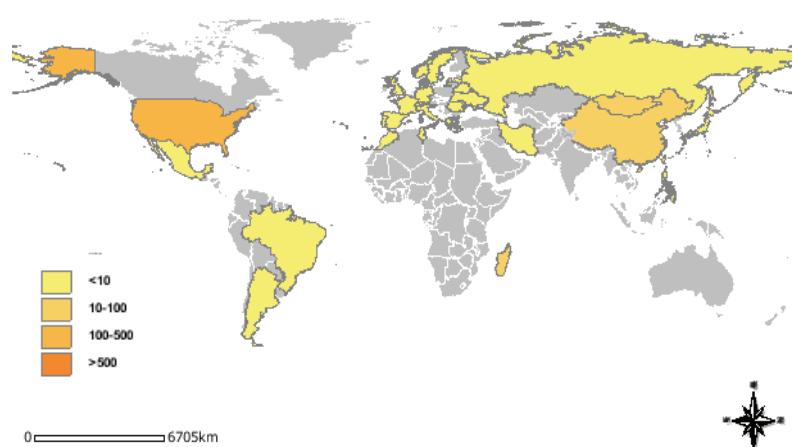
**\*\*WHO data may vary slightly from week to week. It is important to note that AFIOH uses the current week's data on WHO's website. Please refer to [WHO's website](#) for detailed information regarding the WHO Influenza Surveillance data.**

COUNTRY	WHO Surveillance ( <a href="http://gamapserver.who.int/GlobalAtlas/">http://gamapserver.who.int/GlobalAtlas/</a> )					Total Isolates
	A(H1) Wk 51 Season	A(H3) Wk 51 Season	A(not typed) Wk 51 Season	B (not typed) Wk 51 Season		
Argentina	0	0	0	0	0	10
Australia	0	0	0	0	2	13
Brazil	0	0	0	0	6	8
Chile	0	0	0	0	0	2
China	5	34	2	23	26	49
Egypt	0	1	0	0	0	0
France	0	3	0	0	1	4
Germany	0	0	0	0	1	0
Greece	0	0	0	0	0	1
Iran	0	0	0	0	0	1
Israel	0	0	0	2	0	1
Japan	4	34	4	117	0	0
Latvia	0	0	0	0	1	1
Madagascar	11	44	0	5	0	0
Mexico	0	23	0	63	1	131
Mongolia	0	0	9	10	12	17
Morocco	0	0	0	0	0	1
New Caledonia	0	0	0	2	0	4
Norway	0	0	0	1	1	6
Peru	0	0	0	0	10	0
Phillipines	0	0	0	0	0	3
Poland	0	0	0	0	1	0
Portugal	0	2	0	0	0	6
Slovenia	0	0	0	1	0	1
Spain	0	0	0	0	0	0
Sweden	0	0	0	4	1	3
Switzerland	0	1	0	0	0	2
Thailand	0	2	0	51	0	4
Tunisia	5	28	1	5	0	0
Turkey	0	0	0	0	1	0
U.K.	1	2	1	3	0	6
U.S.A	0	4	94	427	60	224
<b>TOTAL</b>	<b>26</b>	<b>178</b>	<b>111</b>	<b>714</b>	<b>79</b>	<b>432</b>
					<b>26</b>	<b>245</b>
						<b>1,569</b>

CDC U.S. Influenza Surveillance Map<sup>1</sup>



WHO International Influenza Surveillance Map<sup>2</sup>



1. National Influenza Activity (CDC): <http://www.cdc.gov/ncidod/diseases/flu/weeklychoice.htm>

2. International Influenza Activity (WHO): <http://gamapserver.who.int/GlobalAtlas/home.asp>

### Avian Influenza Updates

**Human Avian Influenza.** 147 cases of lab-confirmed avian influenza (53% case fatality rate). Table and map were gathered from the EUROPA website on 20 January 2006 (no change since Week 01 report, data gathered on 11 January 2006).

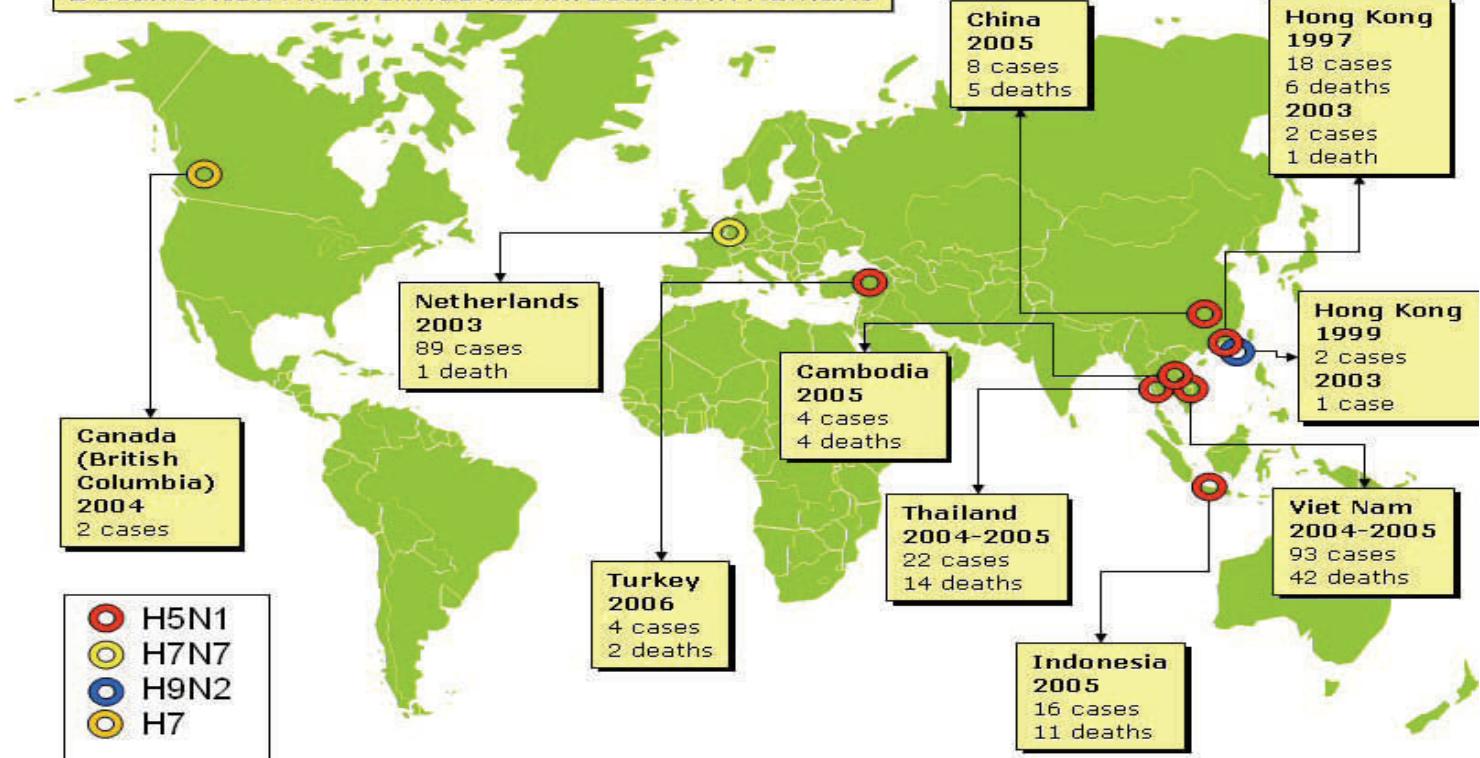
Reference: [http://europa.eu.int/comm/health/ph\\_threats/com/Influenza/ai\\_current\\_en.htm](http://europa.eu.int/comm/health/ph_threats/com/Influenza/ai_current_en.htm)

**Current Situation of Avian Influenza and human cases related to the H5N1 virus subtype  
(as of 11 January 2006)**

Country	Cumulative number of confirmed human cases								Comments	
	Cases				Deaths					
	2003	2004	2005	2006	2003	2004	2005	2006		
Cambodia	0	0	4	0	0	0	4	0	No new case reported since 4 May 2005.	
China (People's Rep. of)	0	0	<b>8</b>	0	0	0	<b>5</b>	0	One additional case reported in Hunan province. Symptoms onset on 24 December. Two patients reported in December have died.	
Indonesia	0	0	<b>16</b>	0	0	0	<b>11</b>	0	Two new fatal cases confirmed: the first developed symptoms on 8 December, hospitalised on 13 December and died on 15 December; the second case had onset of symptoms on 9 December, hospitalised on 11 and died on 12 December. H5N1 endemic in poultry and widespread.	
Thailand	0	<b>17</b>	5	0	0	12	2	0	One additional fatal case reported with onset of symptoms on 25 November, hospitalised on 5 December and died on 7 December. Several outbreaks in poultry reported to OIE on 3 November in three provinces.	
Turkey	0	0	0	4	0	0	0	2	Four confirmed cases in Agri Province, of whom two have died. Another eleven cases have been reported by Turkey and await confirmation from WHO. Outbreaks in poultry active in eight provinces all over the country.	
Viet Nam	3	29	<b>61</b>	0	3	20	19	0	One new case confirmed with onset of symptoms on 14 November. The case is now recovering	
	3	46	<b>94</b>	4	3	32	<b>41</b>	2		
	147				78					

Number of cases includes number of deaths.  
All cases are laboratory-confirmed.  
Bold text indicates changes from previous update

### Documented Avian Influenza infections in humans



Data as of: 11.01.2006

## DoD Global Influenza Surveillance Program Background

### DoD-GEIS Influenza Surveillance Network

The DoD Global Influenza Surveillance Program was established by the Global Emerging Infections Surveillance and Response System (GEIS) in 1997. The program established an influenza surveillance network, which includes the Air Force Influenza Surveillance Network (global influenza surveillance established in 1976), Navy (recruit adenovirus surveillance established in 1996), and the DoD overseas medical research facilities (i.e., the Naval Medical Research Unit located in Cairo, Egypt [NAMRU-2] and the Naval Medical Research Unit located in Jakarta, Indonesia [NAMRU-3]).

### AFIOH Influenza Surveillance Network

In 1976, the US Air Force Medical Service began conducting routine lab-based surveillance of influenza throughout the world. Efforts were expanded when it became part of the DoD-GEIS influenza surveillance network in 1997. AFIOH manages the Air Force surveillance program that includes global influenza surveillance among DoD beneficiaries at 40 tri-service sentinel sites (including deployed locations in Iraq, Qatar, and Kyrgyzstan), several non-sentinel sites, two DoD overseas medical research laboratories (the Armed Forces Research Institute of Medical Sciences located in Bangkok, Thailand [AFRIMS], and the U.S. Naval Medical Research Center-Detachment [NMRC-D] located in Lima, Peru) that collect specimens from local residents in Nepal, Thailand, Argentina, Bolivia, Ecuador, Peru, and Colombia, and the US Army Center for Health Promotion and Preventive Medicine-West (CHPPM-W), that collect specimens from local residents in El Salvador, Guatemala, and Honduras.

### Processing Methods

Specimens are processed in BSL-2 conditions (BSL-3 available) and tested for influenza, parainfluenza, adenovirus, enterovirus, herpes simplex virus (HSV), and respiratory syncytial virus (RSV). Specimens are held up to 14 days before a negative result is given. All influenza isolates are typed as A or B and a portion are subtyped using hemagglutination-inhibition (HI) or polymerase chain reaction (PCR) procedures. A portion of the these isolates undergo molecular sequencing.

### 2005-2006 Trivalent Influenza Vaccine Composition

#### Northern Hemisphere

- A/New Caledonia/20/99-like (H1N1)
- A/California/7/2004-like (H3N2)
- B/Shanghai/361/2002-like

#### 2006 Southern Hemisphere

- A/New Caledonia/20/99-like (H1N1)
- A/California/7/2004-like (H3N2)\*
- B/Malaysia/2506/2004

\*The currently used vaccine virus is A/New York/55/2004

This report was prepared on **18 January 2006**. For an expanded view of the information in this report, visit our website at <https://gumbo.brooks.af.mil/pestilence/Influenza/>. Also available on our website is a list of previous weekly surveillance reports, program information for sentinel sites (including an educational briefing and instruction pamphlets for clinic staff), and an overview of historical data.

Please visit the [DoD-GEIS website](#) for an overview of influenza surveillance at all collaborating DoD-GEIS organizations.

#### AFIOH Contact Information

**Public Health services:** Phone (210) 536-3471; DSN 240-3471

**Laboratory Services:** Phone (210) 536-8383; DSN 240-8383

E-mail: influenza@brooks.af.mil

